Compatibility Determination

Station Name: Chincoteague NWR **Date Established:** May 13, 1943

Establishing Authority:

Migratory Bird Conservation Act

Purpose(s) for which Established:

For use as an inviolate sanctuary, or for any other management purpose for migratory birds.

Description and History of Use Being Evaluated: National Park Service Activities

National Park Service activities on the refuge are covered in the 1992 Final Environmental Impact Statement for the Chincoteague National Wildlife Refuge Master Plan (FEIS) and the 1993 Chincoteague National Wildlife Refuge Master Plan. These activities are allowed by way of an Interagency Agreement between the U. S. Fish and Wildlife Service and the National Park Service; this agreement can be found in Appendix D of the FEIS. Additional information can also be found in the station's 1993 Public Use Plan. These documents are appended.

The only public recreation that occurred on Chincoteague Refuge before the bridge was constructed in 1962 was beach use. Visitors would drive down the beach from the Maryland end of Assateague Island. On June 17, 1957, Congress passed Public Law 85-57, Chincoteague National Wildlife Refuge, Virginia - Bridge and Road. This law authorized the Secretary of the Interior to permit the construction of a bridge and road across Chincoteague National Wildlife Refuge. The objective of this law was "to permit the controlled development of a portion of the seashore of the Chincoteague National Wildlife Refuge, Virginia for recreational purposes, ..." This law also authorized the Secretary to enter into agreements for the construction, maintenance, and operation "of a public beach, concession, parking areas, and other related public conveniences,..." The FWS, on April 1, 1959 entered into an agreement with the Chincoteague-Assateague Bridge and Beach Authority whereby certain refuge lands constituting what is known as Toms Cove Hook were assigned to the Authority for the purpose of developing a public beach and recreational facility. The deed of easement also provided for the construction of a bridge and access road to the Toms Cove Hook.

In 1965 the Assateague Island National Seashore (AINS) was established. Under a Memorandum of Understanding (MOU) completed in the summer of 1979 between the FWS and NPS, the AINS would provide and manage visitor contact and interpretive facilities and programs on a day-use basis for public recreation and interpretation including, but not limited to, swimming and associated beach uses. Also under that agreement, FWS would retain the primary responsibility for managing the wildlife resources within the "Assigned Area," with

the understanding by both agencies that recreational use programs would be planned and carried out to minimize impacts on wildlife resources. In 1990, an Interagency Agreement replaced the MOU, with the new agreement allowing for the same uses as the MOU. This "Assigned Area" is located on Toms Cove Hook which consists of approximately five miles of ocean beach, four miles of shoreline in Toms Cove, and a small area adjacent to one impoundment. NPS provides bath houses, parking for 961 vehicles, a visitor center, trails, and other facilities for visitors who use the area.

After the construction of the bridge in 1962, visitation steadily rose and by 1968 over 500,000 visits were recorded. During the next decade refuge visits increased by an average of 12% annually. In 1987 visitation peaked at over 1.5 million visits, with over 800,000 occurring during the summer season, June through August. In 1993 the refuge received 1,415,830 visits, many of which visited the "Assigned Area."

Anticipated Impacts on Refuge Purposes(s):

NPS activities are likely to cause some disturbance to migratory birds using the beach, Toms Cove, and F-Pool. Two of the major activities administered by the NPS are recreational beach use and off road vehicle use; these activities and their impacts to migratory birds are covered under separate compatibility determinations.

Numerous studies have documented that migratory birds are disturbed by human activity on beaches. Erwin (1989) documented disturbance of common terns and skimmers and recommended that human activity be restricted a distance of 100 meters around nesting sites. Kelin (1993) in a studying waterbird response to human disturbance found that as intensity of disturbance increased, avoidance response by the birds increased and found that out of vehicle activity to be more disruptive than vehicular traffic. Pfister et al. (1992) found that the impact of disturbance was greater on species using the heavily disturbed front side of the beach, with the abundance of the impacted species being reduced by as much as 50 percent. Roberson et al. (1980) discovered, in studying the effects of recreational use of shorelines on nesting birds, that disturbance negatively impacted species composition. Piping plovers which use the refuge heavily are also impacted negatively by human activity. Pedestrians on beaches may crush eggs (Burger 1987, Hill 1988, Shaffer and Laporte 1992, Cape Cod National Seashore 1993, Collazo et al. 1994). Other studies have shown that if pedestrians cause incubating plovers to leave their nests, the eggs can overheat (Burgstrom 1991) or the eggs can cool to the point of embryo death (Welty 1982). Pedestrians have been found to displace unfledged chicks (Strauss 1990, Burger 1991, Hoopes et al. 1992, Loegering 1992, Goldin 1993).

Human disturbance to migratory birds has also been documented in many studies in different locations, such as moist soil management units. Conflicts arise when migratory birds and humans are present in the same areas (Boyle and Samson 1985). Response of wildlife to human activities includes: departure from site(Owen 1973, Burger 1981, Kaiser and Fritzell 1984, Korschgen et al 1985, Henson and Grant 1991, Kahl 1991, Klein 1993), use of sub-optimal habitat (Erwin 1980, Williams and Forbes 1980), altered behavior (Burger 1981,

Korschen et al. 1985, Morton et al. 1989, Ward and Stehn 1989, Havera et al. 1992, Klein 1993), and increase in energy expenditure (Morton et al. 1989, Belanger and Bedard 1990). McNeal et al. (1992) found that many waterfowl species avoid disturbance by feeding at night instead of during the day. Studying the effects of human visitation on waterbirds at J.N. "Ding" Darling NWR, Klein (1989) found resident waterbirds to be less sensitive to disturbance than migrants; she also found that sensitivity varied according to species and individuals within species. Ardeids were quite tolerant of people but were disturbed as they took terrestrial prey; great blue herons, tricolored herons, great egrets, and little blue herons were observed to be disturbed to the point of flight more than other birds. These birds are also found on Chincoteague Refuge, and Kushlan (1987) found that the need of these birds to move frequently while feeding may disrupt interspecific and intraspecific relationships. In addition, Batten (1977) and Burger (1981) found that wading birds were extremely sensitive to disturbance in the northeastern U.S. Kelin (1993) in a studying waterbird response to human disturbance found that as intensity of disturbance increased, avoidance response by the birds increased and found that out-of-vehicle activity to be more disruptive than vehicular traffic; Freddy et al. (1986) and Vaske (1983) also found the latter to be true. In regards to waterfowl, Klein (1989) found migratory dabbling ducks to be the most sensitive to disturbance and migrant ducks to be more sensitive when they first arrived, in the late fall, than later in winter. She also found that gulls and sandpipers to be apparently insensitive to human disturbance, with Burger (1981) finding the same to be true for various gull species.

For songbirds, Gutzwiller et. al. (1994) found that singing behavior of some species was altered by low levels of human intrusion. Some studies have found that some bird species habituate to repeated intrusion; frequently disturbed individuals of some species have been found to vocalize more aggressively, have higher body masses, or tend to remain in place longer (Cairns 1980, Parsons and Burger 1982). Disturbance may affect the reproductive fitness of males by hampering territory defense, male attraction and other reproductory functions of song (Arrese 1987, Radesater et. al. 1987). Disturbance, which leads to reduced singing activity, would make males rely more heavily on physical deterrents in defending territories which are time and energy consuming (Gill and Wold 1975, Ewald and Carpenter 1978, Carlson and Morena, 1992).

Migratory birds on parts of one of the refuge's fourteen impoundments, five miles of beach, and four miles of shoreline within Toms Cove are impacted to some degree and at certain times of the year by NPS activities within the "Assigned Area;" the lower two and one-half miles of the area are closed to all public use from March 15 through August of each year. This area is subject to both visual and noise disturbance, during the time of day when the refuge is opened. When public use of this area is the highest (June, July, and August), waterfowl use is very low; however, marsh/wading bird and shorebird use is high. Due to high visitor use from Memorial Day weekend through Labor Day weekend, day time migratory bird use within the one mile recreational beach zone is limited to mainly gulls and others that can habituate to humans. Use in the one and one-half mile off road vehicle zone depends on the number of vehicles present; the two and one-half mile closure provides for an area for shorebirds to rest and feed undisturbed. Minimal impacts may occur to songbirds using the limited amount of shrub habitat which exists within this area. Migratory bird use in

the impoundment affected is high, when water levels are suitable, although some disturbance is occurring and some species or individuals may be avoiding the area due to the disturbance.

Determination: (Check One)

This use is compatible __X__ This use is not compatible _____

The following stipulations will ensure compatibility:

Only wildlife oriented recreation will be permitted north of the recreational beach zone; the "Assigned Area" will not be increased.

The long range maximum beach capacity of 4,400 visitors at any one time will not be exceeded.

Parking areas will not exceed the current 961 spaces.

Areas important to nesting piping plovers and other shorebirds will continue to be closed to recreational use.

Portions of the remaining 1.5 mile ORV zone will be subject to closure if piping plovers establish nesting territories in those areas.

The number of off road vehicles will continue to be limited to six per one-half mile.

Activities will only be permitted during open hours, to allow total wildlife use of the area from closing in the evening until opening the next morning.

Public use activities will be monitored and if visits increase to a point where disturbance becomes a problem, additional access restrictions will be implemented.

Justification:

Although some of the NPS activities are forms of nonwildlife oriented recreation, they are consistent with the Act that established the Assateague Island National Seashore and the Interagency Agreement between the FWS and NPS. In addition, they are consistent with the 1957 Act which allowed for the bridge and road to be built in order for the beach to be developed into a recreational beach. These uses have been ongoing since the early 1960s and migratory bird populations on the refuge remain high. Other activities, such as NPS's interpreted programs educate visitors about the natural resources found on the refuge.

From a biological standpoint, restrictions are in place to assure the protection of the migratory shorebirds, and particularly the threatened piping plover, which use the refuge for nesting and feeding. NPS activities are not allowed in areas critical to the migratory bird

populations using the refuge. In addition, the migratory birds, which may be displaced by these activities, have other suitable areas on the refuge to go.

NPS activities will be evaluated on a regular basis to determine their continued compatibility.

Project Leader John D. Schroer, Refuge Manager July 6, 1994
(Name/Title/Signature/Date)

Review and Concurrence _____
(Name/Title/Signature/Date)

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(Name/Title/Signature/Date)

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